Attorney: Richard J. Paciulan

Docket No.: 47426/RJP/B600

Inventor(s): Myles H. Wakayama

Title: LOW OFFSET AND LOW GLITCH ENERGY
CHARGE PUMP FOR PLL-BASED TIMING
RECOVERY SYSTEMS

Sheet 1 of 4

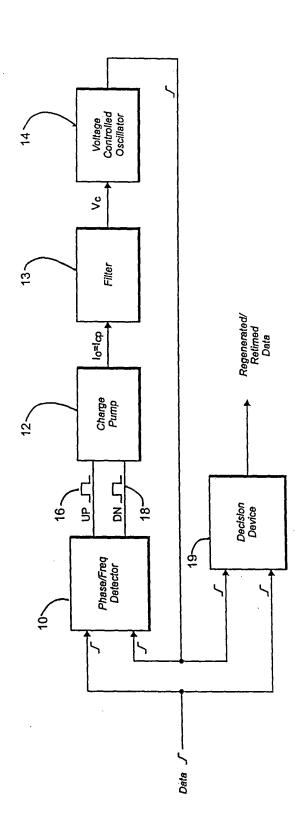


FIG. 1 (Prior Art)

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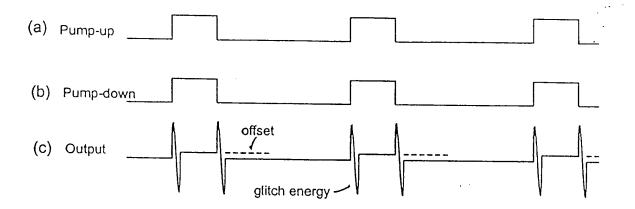


FIG. 2

FIG. 3 PRIOR ART

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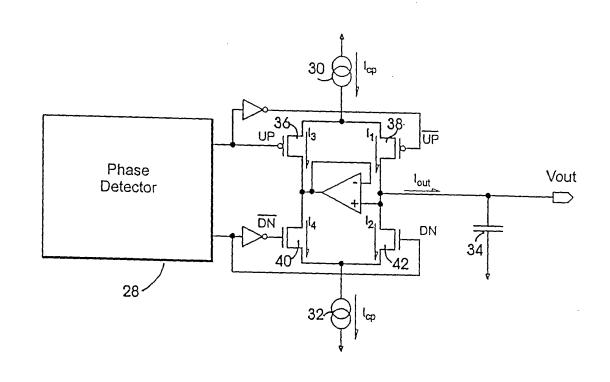


FIG. 4 PRIOR ART

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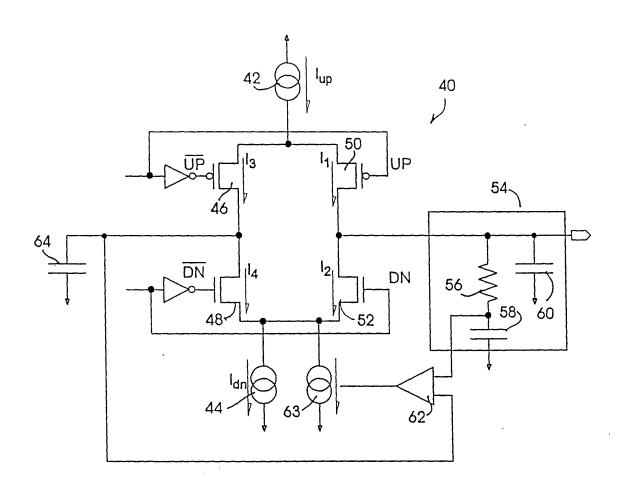


FIG. 5